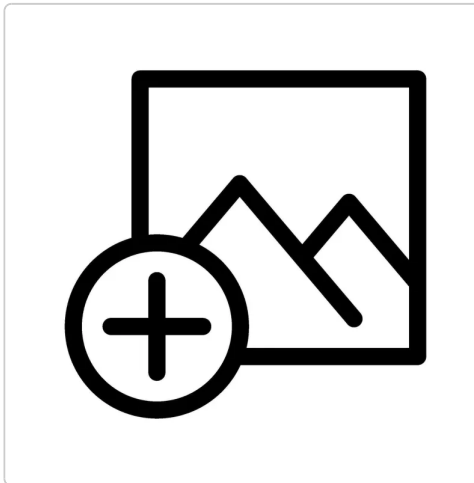
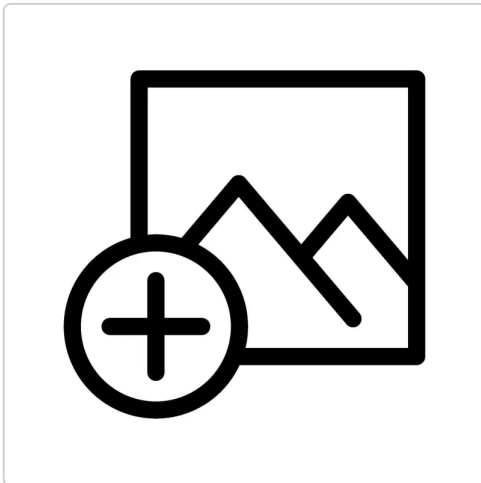


MOTENERGY – ME0907 – 48V PMSM Motor



Reference : MOT-ME0907-48V-100A

Brand : MOTENERGY

Options :

No variants

3D Model : Available

EAN-13 : 3762552429032

The Motenergy ME0907 is a compact 48V PMSM motor designed for low-voltage electric traction on karts, scooters, converted light vehicles or mobile machines. This 24–48 VDC brushless motor with three-phase star winding combines 100 A continuous current at 48 VDC, a maximum speed of 5000 rpm and an integrated KTY84-130 thermal sensor, making it a consistent base for a traction system that requires compact packaging, precise control and usable thermal monitoring.

The ME0907 belongs to the family of permanent magnet synchronous motors, also referred to as BLAC motors or brushless traction motors. The main positioning retained here is that of a 48V PMSM motor for electric traction, with BLAC and brushless used as coherent semantic variants. It is not positioned as a generic leisure motor, but as a conversion component intended for integration with a suitable controller, in a low-voltage battery architecture where the balance between current, heating, packaging and control strategy remains critical.

24–48 V control

48V PMSM motor for electric traction

From an electrical standpoint, the Motenergy ME0907 operates within a 24 to 48 VDC range. Its three-phase star winding and 20 turns per phase clearly place it in the category of motors intended for structured electronic control rather than simplified direct power supply. For an integrator, this means that a controller compatible with a PMSM motor or a three-phase brushless motor is required, with a current-limiting and thermal protection strategy consistent with the intended duty cycle. In this configuration, the motor can meet 48V traction requirements calling for smooth low-speed behavior and stable operation over repeated cycles, provided the controller, battery and wiring harness are dimensioned as a complete system.

Battery wiring and voltage drop

The stated 100 A continuous current at 48 VDC and the maximum speed of 5000 rpm directly shape system choices. These two values should not be considered separately: they determine DC cable sizing, actually usable battery capacity, acceptable voltage drop and controller settings during start-up, recovery and load holding phases. For an electric retrofit or light-duty motorization project, the motor fits well in an architecture where a low-voltage traction solution is preferred over a high-voltage assembly while still maintaining a serious control strategy. This is especially relevant where the environment imposes a compact package, rational wiring and reduced maintenance on the electric machine side.

Motor markers

Manufacturer	Motenergy
Model	ME0907
Main retained type	48V PMSM motor for electric traction
Associated technology variants	BLAC motor / three-phase brushless motor
Operating voltage range	24 to 48 VDC
Continuous current	100 A at 48 VDC
Maximum rotor speed	5000 rpm
Stated efficiency	90 %
Torque constant	0.13 Nm/A
Electrical architecture	Three-phase, star winding
Number of pole pairs	4
Number of magnets	8
Number of turns per phase	20
Integrated thermal sensor	KTY84-130
Sensor connector	Delphi 2-way 090273-01
Power terminals	U / V / W
Body diameter	Approx. 164 mm
Total length	Approx. 147.5 mm
Main body length	Approx. 107.5 mm
Front face diameter	Approx. 201 mm
Marked front shoulder diameter	Approx. 149.2 mm
Shaft diameter	22.23 mm
Shaft type retained for integration	Keyed shaft
Weight	Approx. 10 kg
Front bearing	NTN6006 LLUC3/5K
Cooling	Air, internal ventilation
Indicated fan rotation direction	CCW fan

Machine mounting

Mechanical integration on light vehicle

The ME0907 mechanical layout is another strong point because it addresses real integration issues. The body is about 164 mm in diameter, with an overall length close to 147.5 mm and a front face around 201 mm. The 22.23 mm shaft requires special attention regarding coupling, centering, hub selection and resistance to radial loads. This 48V brushless traction motor should not be selected only on the basis of its voltage range: its installation on the chassis, mount rigidity, alignment with the reduction stage or transmission, and the management of dynamic loads directly affect front bearing life and overall system stability. In practice, a serious preliminary design must take volumes, interfaces and shaft mounting into account from the start.

Brushless motor with thermal sensor

Thermal monitoring is one of the differentiators that gives the Motenergy ME0907 real value in integration. The drawing indicates an integrated KTY84-130 sensor in the windings, with a Delphi 2-way 090273-01 connector, in addition to the U, V and W phase outputs. For a compact low-voltage traction motor, this feature is especially useful because it allows the implementation of a torque reduction, alarm or shutdown strategy based on an actual temperature measurement instead of a fixed safety margin. In a constrained environment such as an electric kart, converted scooter or semi-enclosed mobile machine, this thermal feedback significantly improves validation quality and reduces the risk of unnoticed overheating during initial testing.

Thermal behavior

Internal ventilation under repeated duty

Cooling relies on internal ventilation, with a fan rotation direction indicated on the drawing. In practice, thermal stability depends directly on the actual installation conditions. An overly confined integration, disturbed airflow or repeated high-load operation can reduce the motor's ability to sustain its duty cycles over time. For this reason, thermal validation in real operating conditions remains just as important as simply reading nominal data, especially if the application involves hard accelerations or repeated stop-and-go cycles.

Target uses

Brushless motor for electric kart

The Motenergy ME0907 is primarily intended for 24–48 V electric traction applications where compactness, electronic control and integration consistency take priority over a “universal kit” logic. In an electric kart, it can provide a relevant base when the goal is to build a more accurately controlled traction system than with a conventional DC motor, with behavior that can be fully exploited through a suitable controller and integrated thermal supervision. On an electric scooter or converted light vehicle, the motor suits architectures seeking a compact low-voltage traction unit without brushes, with control electronics able to manage current, temperature and dynamic response. On a mobile machine, it can also be considered for motorization functions where the package, the approximately 10 kg mass and the presence of a well-defined mechanical shaft simplify integration work.

48V brushless motor for traction

The product's value also lies in the combination of several markers rarely found together in simplified descriptions: 48V PMSM motor, three-phase star winding architecture, KTY84-130 sensor, 22.23 mm shaft, internal ventilation, dimensions

already usable for engineering work and U/V/W power references. For a design office, this saves time from the preliminary project stage onward. The content can therefore answer searches such as Motenergy ME0907 motor, 48V brushless motor for electric traction or brushless motor for electric kart while remaining faithful to a genuinely integrable use case. The benefit is not merely the brushless technology itself, but the possibility to build a system around the motor that is better controlled, better protected and more robust in service than consumer-grade solutions focused only on headline power figures.

Field questions

48V battery compatibility

Is this motor suitable for a 48V battery architecture?

Yes, the ME0907 is explicitly positioned for a 24–48 VDC range, with its continuous current value stated at 48 VDC. The full battery, harness, protection and controller assembly must still be validated at system level.

What type of controller should be used with the ME0907?

A controller compatible with a PMSM motor or three-phase brushless motor should be selected, capable of correctly managing motor current and ideally making use of the temperature feedback.

Is this motor suitable for an electric kart or scooter?

Yes, these are coherent use cases given its format, voltage range and low-voltage traction positioning, provided that the transmission, cooling and control strategy are properly engineered for the real application.

Which points should be checked first during integration?

The most critical points are shaft alignment, cable sizing for 100 A continuous duty, airflow around the motor and the use of the KTY84-130 sensor within system protection functions.

Serious 48V project

The Motenergy ME0907 is a 48V brushless traction motor that stands out less through simplified power claims than through the consistency of its integration data: three-phase PMSM architecture, 24–48 VDC range, onboard thermal sensor, usable dimensions and clearly identified connection points. For an electric kart, electric scooter, low-voltage retrofit or mobile machine project, it provides a serious base provided it is integrated with a suitable controller, rigorous mechanical mounting and thermal validation under real operating conditions.

Searches frequently associated with this product: BLAC motors, electric traction motors, electric retrofit motor, electric motor for light vehicle. [See the corresponding category](#)

Product sheet written by **Camille F.** and reviewed by the EVEA Distribution technical team — Last updated on 27/04/2026.

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